



Progress Workgroup RDBMS

The Progress RDBMS leads the database market with low cost of ownership and the ability to scale to meet the demands of e-commerce, and application service providers.

HIGHLIGHTS

The Progress RDBMS is the #1 embedded database according to the annual Gartner/Dataquest survey of the RDBMS market.

The Progress RDBMS provides extensive flexibility in application development with a high performance interface for the Progress 4GL and an open, standards-based SQL-92 database engine.

HIGHLIGHTS

- **High availability with on-line backup and cluster failover**
- **Total data management for Web-based, client/server, host-based, and mixed mode environments**
- **Open-client interfaces: ODBC, JDBC, ESQL**
- **Self-tuning features make databases easy to maintain**

The Progress RDBMS is the world's #1 embedded database, according to a Gartner Group/Dataquest study. More developers put Progress at the heart of their applications than any other database.

One reason for this success is Progress' ease of maintenance, superior reliability, and high availability, which translate to the industry's lowest cost of ownership. Industry analysts and customers have attested to the fact that Progress provides the lowest cost of ownership of any relational database, year in and year out.

The Progress RDBMS offers many characteristics essential to both application developers and IT departments:

- The industry's lowest cost of ownership
- High availability and absolute reliability
- Broad platform support
- Open interfaces for integration with other tools and applications

The **Progress Workgroup RDBMS** offers the power of an enterprise-class relational database optimized for workgroups of 5 to 30 simultaneous users in a single processor environment. This cost-effective, department-level solution provides high performance, multi-user support, and cross-platform interoperability – at an excellent value. Because the

flexible database architecture provides optimal throughput on all platforms, a database developed on one machine can serve applications on other systems and network configurations.

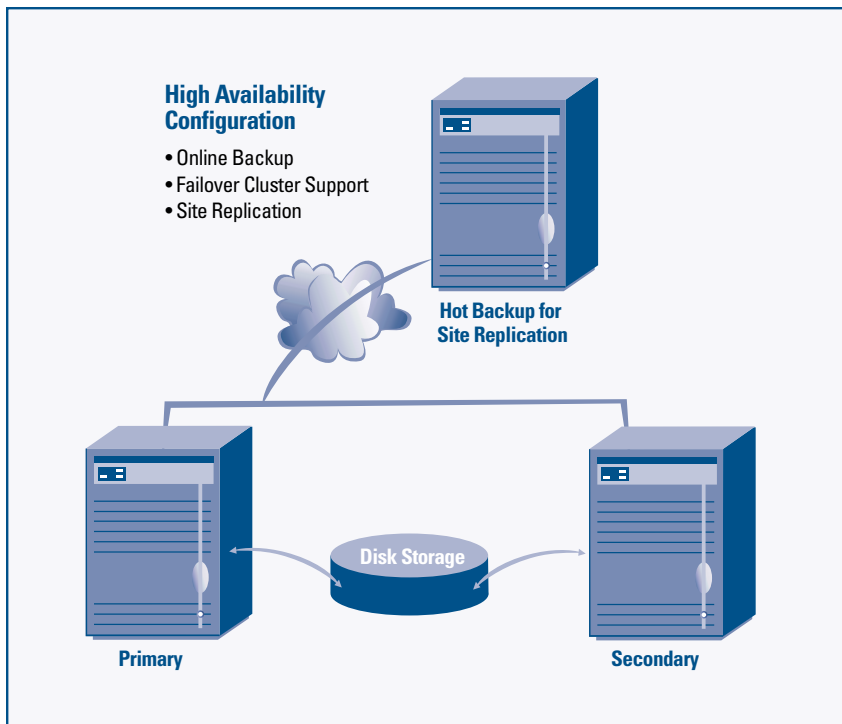
Built on the same code base as our other database products, you can build your solution for deployment with the Progress Workgroup RDBMS today and upgrade as your needs grow – all without a single change in program code. You will enjoy the same reliable service and proven technology of an industry leader, and your staff will not lose productivity learning a new system.

Ease of Administration Simplifies ITs Job

Embedded in enterprise applications, Progress databases are often transparent to the IT staff that supports them. Setup and configuration is easy for the Progress Workgroup RDBMS, thereby decreasing your costs of deployment. And, Progress' unparalleled reliability minimizes the cost and complexity of database management and tuning.

Optimized recovery log space management and automatic space reuse techniques minimize the need to monitor resources used during normal processing. If an operation does not require recovery, resources

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High database availability can be achieved with both failover cluster support and site replication. By constantly applying individual transactions, a secondary system stays current with the live system without requiring constant backups. For instances where a database image is lost, a Hot Backup can be maintained at the same site or remote location.

will not be used, thereby minimizing recovery time in the event of a system failure. Automatic crash recovery means no special steps are required when bringing an application online.

The Progress Workgroup RDBMS eases the management of large databases by supporting multiple storage areas, which can be distributed across your available disk space. Important tables can be located on fast disk drives, and time-consuming management operations can be performed only on the storage areas that are required, rather than the database as a whole.

Progress Explorer Provides Powerful Configuration Tools for Workgroup Deployments

The Progress Explorer further simplifies administration and management of Progress databases and servers across

the network. Through a single, graphical interface, you can configure, monitor, start and stop the various server components associated with an application.

Progress Explorer can be run from a single location and used remotely to manage systems simultaneously across multiple platforms.

- Database servers, application servers, transaction servers, and name servers can all be managed through a common interface.
- Flexible configuration options provide for multiple service levels by establishing named service groups.
- Configuration support is provided for current network designs including firewall support.

High Availability Means No Downtime for Applications

Mission critical applications require industrial-strength armor to protect your data. The Progress Workgroup RDBMS provides all of the security and data protection capabilities required to ensure reliability and maintain high availability.

The following are some of the key features that ensure high availability:

- *Efficient and Automatic Crash Recovery* is performed when the database is restarted after failure without user intervention.
- *Transaction Logging* to protect the database in the event of a database failure. The database uses the recovery log during crash recovery to reapply committed changes to the database and remove all changes from uncommitted transactions.
- *Roll-Forward Recovery* allows recovery of lost transactions in the event of media failure. Roll-forward recovery replays committed transactions that have occurred since the last backup.
- *Point-in-Time Recovery* allows the database to be rolled forward from a backup to a particular point in time. This allows recovery from an inadvertent user error or other data related failures.
- *Site Replication* to allow hot standby for one or more systems to be maintained at the same site or a remote site.
- *On-line Full and Incremental Backup* to eliminate the need for scheduled downtime for backups. The Workgroup RDBMS supports on-line backup during normal processing.

- *Two-phase Commit Protocol* to ensure the integrity and consistency of transactions that span multiple databases and multiple sites. This automatic feature makes sure that a transaction can be rolled back if a failure occurs at any node on the network when applications create transactions that use multiple databases.
- *Dynamic User and Application-Specific Buffer Allocation* to prevent table scan operations from affecting the overall buffer pool.

Flexible Engine Has First Class Interface to SQL

The Progress RDBMS offers essential flexibility in developing software solutions by providing both a high performance interface for the Progress 4GL and an open, standards-based interface for SQL-92. The database meets the ANSI SQL-92 Entry-Level standard, providing an open environment that enables efficient integration with third-party tools, such as development software, reporting and OLAP tools.

Featuring a state-of-the-art, cost-based query optimizer, the SQL-92 language

processor incorporates APIs for ODBC, JDBC, and Embedded SQL/C, and provides SQL extensions for more robust solutions. These extensions include:

- Java stored Procedures and Triggers
- GRANT/REVOKE security model
- Updatable views
- Derived Tables
- Multi-Schema support
- Integrated Schemas

Since both language interfaces share the same storage engine, SQL applications enjoy the same rock solid foundation as the 4GL, and can be used simultaneously without restrictions.

With Progress' ODBC driver and server approach, the Progress RDBMS allows a single broker to support both 4GL and SQL connections, which greatly simplifies support for SQL-based database connections.

A Full Suite of Tools to Build Your Applications

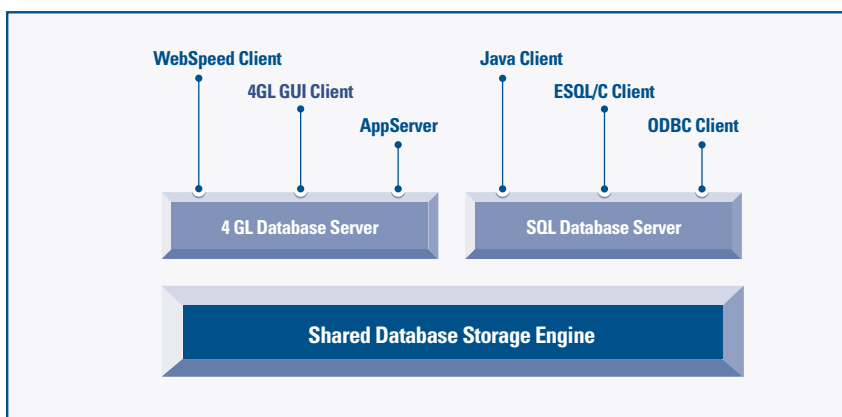
Progress brings more than a database to application developers. From our own Progress 4GL and SpeedScript languages to the Open AppServer, we

provide all the tools necessary to develop, deploy and manage applications. And, our Universal Application Architecture (UAA) ensures that Progress tools integrate with technologies that you will use today, and tomorrow.

Develop Once and Watch Your Application Scale

The Progress Workgroup RDBMS is built on the same code base as our Personal and Enterprise RDBMS products. You can build a solution that satisfies your objectives today and upgrade as your needs grow – all without a single change in your program code. The **Progress Personal RDBMS** is designed primarily for developing, prototyping, and testing applications.

The **Progress Enterprise RDBMS** offers all of the capabilities as the Workgroup RDBMS, plus it is built to scale to well over 10,000 concurrent users. High concurrent processing, large buffer pools, spin locks, asynchronous I/O processes, increased parallelism through the concurrent commit lock protocol, and more – the Enterprise RDBMS has all the tools necessary to handle enterprise and Internet deployments. If an organization grows larger than 49 users, they simply need a license upgrade to move up to the Progress Enterprise RDBMS.



With 4GL and SQL-92 access to the database, applications developers can provide first class support for a wide variety of clients and the Progress AppServer.

Specifications

Data Types Supported

Character: 32,000 bytes (maximum)
Date: 1/1/32768 BC to
1/1/32767 AD
Decimal: 50 digits total, 1-10
decimal places
Integer: -2,167,483,648 to
2,167,483,648
Logical: true/false, yes/no
BLOB: Binary Large Objects
up to 4GB per BLOB

Network Support

– TCP/IP

Operating System Support

– Windows NT®/2000®
– Citrix® MetaFrame
– Windows 95/98*
– Compaq Tru64
– DG/UX Intel
– HP-UX®
– IBM® AIX®
– Linux Intel
– SCO Unixware®, OpenServer™
– Sun™ Solaris® Intel & SPARC

* Personal RDBMS only

API Support

– ANSI SQL-92, Progress 4GL,
ODBC, JDBC
– Embedded SQL/C

Language Support

Supports most languages including
double-byte-enabled character sets
and Unicode.

Recommended Database Parameters

Tables	32,000
Indexes	32,000
Fields per table	32,000
Rows per table	2.147 Billion
Rows per block	256
Concurrent Users	30
Concurrent Transactions	Up to 49
Record length	32,000 bytes
Database Buffers (32-bit)	500,000 / 2GB
Database Size	1-2 GB
Recovery Area	1-2 GB
Data Area	1-2 GB
Storage Areas	100
Database Block Size	4K (1K Unix)
Extent Size:	2 GB

*These limits were determined by
testing ability or platform capacity,
and not necessarily by product design.*

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